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MISCELLANEOUS QUESTIONS.

Edited by R. D. Carmichael.

QUESTIONS.

14. In the process of solving a certain physical problem Professor H. S. Uhler of Yale University was led to the definite integral

$$\int_0^a (a^2 - x^2)x\,dx \int_{a-x}^{a+x} \frac{e^{-cy}}{y}\,dy,$$

for which he found the value

$$\frac{1}{c^2}\left[a^2 - \frac{3a}{c} + \frac{1}{c}\left(a + \frac{3}{2c}\right)(1 - e^{-2ac})\right],$$

a and c being positive constants. Professor Uhler would like to see how other persons attack the problem of evaluating this integral.

15. We are in receipt of the following communication from Mr. W. E. Heal of Washington, D. C.: "In the Proceedings of the Royal Society of Edinburgh, Vol. VII, p. 144, in some mathematical notes by Professor P. G. Tait, it is stated:

"If $x^3 + y^3 = z^3$, then $(x^3 + z^3)^3y^3 + (x^3 - y^3)^3z^3 = (z^3 + y^3)^3x^3$.

"This furnishes an easy proof of the impossibility of finding two integers the sum of whose cubes is a cube.

"The writer has failed to see how this 'easy proof' follows and has been unable to find the question discussed or even mentioned in Tait's collected works. Can some reader of the Monthly supply the missing link or links?"

REPLY.

10. What use has been made of regular conference periods for assistance to individual students of secondary and college mathematics, and what services may they render?

I. Remarks by C. R. MacInnes, Princeton University.

During the last nine years the mathematical department at Princeton has tried with considerable success a scheme for assisting the students in the preparation of their work. Each evening of the week, a class-room or two is kept open and a member of the department is on hand to answer the questions that any student may ask. Attendance is purely voluntary on the part of the students and no attempt is made to keep a check on them. In hard courses like analytics, calculus or mechanics, students use this opportunity for help very freely and, in the main, very fairly. The few who regard it as a chance for free tutoring can soon be attended to, as can the man who obviously has not yet attempted the lesson himself.

An instructor has in this way a chance at the men individually when their heart is in their work, and a good deal can be done. The drawback that we have found comes from the smallness of the department; in a rush it is so much easier to work the student's problem than to point the way out of his immediate difficulty. We have as a usual thing two men on duty each evening and those of us who have done the work regard our evening "in Missouri" as about the most strenuous of the week.

It is the general opinion in our department that the plan has been a considerable help to us.